

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An electronic device comprising:
a substrate; and
a film disposed above the substrate, the film consisting essentially of LaAlO₃, Al₂O₃, and La₂O₃, with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃.
2. (Currently Amended) An electronic device comprising:
a substrate; and
a film disposed above the substrate, the film including:
LaAlO₃ arranged as a layered structure of one or more monolayers;
Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
La₂O₃ arranged as a layered structure of one or more monolayers.
3. (Previously Presented) The electronic device of claim 2, wherein the film is substantially amorphous.
4. (Previously Presented) The electronic device of claim 2, wherein the film exhibits a dielectric constant in the range from about 21 to about 25.
5. (Original) The electronic device of claim 1, wherein the film exhibits an equivalent oxide thickness (t_{eq}) in the range from about 1.5 Angstroms to about 5 Angstroms.

6. (Original) The electronic device of claim 1, wherein the film exhibits an equivalent oxide thickness (t_{eq}) of less than 3 Angstroms.
7. (Currently Amended) A transistor comprising:
 - a body region between first and second source/drain regions in a substrate;
 - a film on the body region between the first and second source/drain regions, the film including LaAlO₃, Al₂O₃, and [[La₂AlO₃]] La₂O₃ with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
 - a gate coupled to the film;
 - the LaAlO₃ being formed by atomic layer deposition including:
 - pulsing a lanthanum containing precursor into a reaction chamber containing the substrate;
 - pulsing a first oxygen containing precursor into the reaction chamber;
 - pulsing an aluminum containing precursor into the reaction chamber; and
 - pulsing a second oxygen containing precursor into the reaction chamber.
8. (Previously Presented) The transistor of claim 7, wherein pulsing the lanthanum containing precursor includes pulsing a La(thd)₃ (thd = 2,2,6,6- tetramethyl-3,5- heptanedione) source gas into the reaction chamber.
9. (Previously Presented) The transistor of claim 7, wherein pulsing the aluminum containing precursor includes pulsing a DMEAA source gas into the reaction chamber.
10. (Previously Presented) The transistor of claim 7, wherein pulsing the aluminum containing precursor includes pulsing a trimethylaluminum source gas into the reaction chamber.
11. (Previously Presented) The transistor of claim 7, wherein the transistor further includes a floating gate and a floating gate dielectric situated between the film and the gate with the floating

gate dielectric disposed on the floating gate, separating the floating gate and the gate, the floating gate dielectric containing LaAlO₃ arranged as a layered structure of one or more monolayers.

12. (Currently Amended) A transistor comprising:

a body region between first and second source/drain regions in a substrate;

a film on the body region between the first and second source/drain regions, the film consisting essentially of LaAlO₃, Al₂O₃, and La₂O₃, with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
a gate coupled to the film.

13. (Currently Amended) A transistor comprising:

a body region between first and second source/drain regions in a substrate;

a film on the body region between the first and second source/drain regions, the film including La₂O₃, LaAlO₃, and Al₂O₃ with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
a gate coupled to the film.

14. (Previously Presented) The transistor of claim 13, wherein the film is substantially amorphous.

15. (Previously Presented) The transistor of claim 13, wherein the film exhibits a dielectric constant in the range from about 21 to about 25.

16. (Previously Presented) The transistor of claim 12, wherein the film exhibits an equivalent oxide thickness (t_{eq}) in the range from about 1.5 Angstroms to about 5 Angstroms.

17. (Previously Presented) The transistor of claim 12, wherein the film exhibits an equivalent oxide thickness (t_{eq}) of less than 3 Angstroms.
18. (Previously Presented) The transistor of claim 13, wherein the transistor further includes:
a floating gate situated between the body region and the gate; and
a floating gate dielectric disposed between the floating gate and the gate.
19. (Previously Presented) The transistor of claim 13, wherein the transistor further includes a floating gate and a floating gate dielectric situated between the film and the gate with the floating gate dielectric disposed between the floating gate and the gate, the floating gate dielectric containing LaAlO₃.
20. (Withdrawn - Currently Amended) A memory comprising:
a number of access transistors, each access transistor including:
a body region between first and second source/drain regions in a substrate;
a film on the body region between the first and second source/drain regions, the film including La₂O₃, LaAlO₃, and Al₂O₃ with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
a gate coupled to the film;
a number of word lines coupled to a number of the gates of the number of access transistors;
a number of source lines coupled to a number of the first source/drain regions of the number of access transistors; and
a number of bit lines coupled to a number of the second source/drain regions of the number of access transistors;
the LaAlO₃ being formed by atomic layer deposition including:
pulsing a lanthanum containing source gas into a reaction chamber containing a

substrate;

pulsing an aluminum containing source gas into a reaction chamber.

21. (Withdrawn) The memory of claim 20, wherein pulsing the lanthanum containing source gas includes pulsing a La(thd)₃ (thd = 2,2,6,6- tetramethyl-3,5- heptanedione) source gas into the reaction chamber.

22. (Withdrawn) The memory of claim 20, wherein pulsing the aluminum containing source gas into the reaction chamber includes pulsing a DMEAA source gas into the reaction chamber.

23. (Withdrawn) The memory of claim 20, wherein pulsing the aluminum containing source gas includes pulsing a trimethylaluminum source gas into the reaction chamber.

24. (Withdrawn) The memory of claim 20, wherein the memory is a flash memory.

25. (Withdrawn) The memory of claim 20, wherein the memory is a dynamic read access memory.

26. (Withdrawn - Currently Amended) A memory comprising:
a number of access transistors, each access transistor including:
a body region between first and second source/drain regions in a substrate;
a film on the body region between the first and second source/drain regions, the film including La₂O₃, LaAlO₃, and Al₂O₃ with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
a gate coupled to the film;
a number of word lines coupled to a number of the gates of the number of access transistors;
a number of source lines coupled to a number of the first source/drain regions of the

number of access transistors; and

a number of bit lines coupled to a number of the second source/drain regions of the number of access transistors.

27. (Withdrawn) The memory of claim 26, wherein the film exhibits a dielectric constant in the range from about 21 to about 25.

28. (Withdrawn) The memory of claim 26, wherein the film exhibits an equivalent oxide thickness (t_{eq}) in the range from about 1.5 Angstroms to about 5 Angstroms.

29. (Withdrawn) The memory of claim 26, wherein each access transistor further includes a floating gate and a floating gate dielectric situated between the film and the gate with the floating gate dielectric disposed between the floating gate and the gate, the floating gate dielectric containing LaAlO₃ arranged as a layered structure of one or more monolayers.

30. (Withdrawn) The memory of claim 26, wherein the memory is a dynamic read access memory.

31. (Withdrawn) The memory of claim 26, wherein the memory is a flash memory.

32. (Withdrawn - Currently Amended) An information handling device comprising:
a processor;
a memory, the memory including:

a number of access transistors, each access transistor having:

first and second source/drain regions in a substrate;

a body region between the first and second source/drain regions;

a film on the body region between the first and second source/drain regions, the film including La₂O₃, LaAlO₃, and Al₂O₃ with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a

layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and

a gate coupled to the film;

a number of word lines coupled to a number of the gates of the number of access transistors;

a number of source lines coupled to a number of the first source/drain regions of the number of access transistors;

a number of bit lines coupled to a number of the second source/drain regions of the number of access transistors; and

a system bus that couples the processor to the memory array;

the LaAlO₃ being formed by atomic layer deposition including:

pulsing a lanthanum containing source gas into a reaction chamber containing the substrate; and

pulsing an aluminum containing source gas into the reaction chamber.

33. (Withdrawn) The information handling device of claim 32, wherein pulsing the lanthanum containing source gas includes pulsing a La(thd)₃ (thd = 2,2,6,6- tetramethyl-3,5-heptanedione) source gas into the reaction chamber.

34. (Withdrawn) The information handling device of claim 32, wherein pulsing the aluminum containing source gas includes pulsing a DMEAA source gas into the reaction chamber.

35. (Withdrawn) The information handling device of claim 32, wherein pulsing the aluminum containing source gas includes pulsing a trimethylaluminum source gas into the reaction chamber.

36. (Withdrawn) The information handling device of claim of claim 32, wherein each access transistor further includes:

a floating gate situated between the body region and the gate; and

- a floating gate dielectric disposed between the floating gate and the gate.
37. (Withdrawn) The information handling device of claim 32, wherein the information handling device is a computer.
38. (Withdrawn - Currently Amended) An information handling device comprising:
- a processor;
 - a memory, the memory including:
 - a number of access transistors, each access transistor having:
 - first and second source/drain regions in a substrate;
 - a body region between the first and second source/drain regions;
 - a film on the body region between the first and second source/drain regions, the film including La₂O₃, LaAlO₃, and Al₂O₃ with the LaAlO₃ arranged as a layered structure of one or more monolayers and the Al₂O₃ arranged as a layered structure of one or more monolayers, wherein the Al₂O₃ is structured as a layer having a thickness essentially equal to a minimum number of monolayers to provide a bulk band gap of Al₂O₃; and
 - a gate coupled to the film;
 - a number of word lines coupled to a number of the gates of the number of access transistors;
 - a number of source lines coupled to a number of the first source/drain regions of the number of access transistors; and
 - a number of bit lines coupled to a number of the second source/drain regions of the number of access transistors; and
 - a system bus that couples the processor to the memory array.
39. (Withdrawn) The information handling device of claim 38, wherein the film exhibits a dielectric constant in the range from about 9 to about 30.
40. (Withdrawn) The information handling device of claim 38, wherein the film exhibits an equivalent oxide thickness (t_{eq}) in the range from about 1.5 Angstroms to about 5 Angstroms.

41. (Withdrawn) The information handling device of claim 38, wherein the memory is a flash memory.

42. (Withdrawn) The information handling device of claim 38, wherein the memory is a dynamic read access memory.

43. (Withdrawn) The information handling device of claim 38, wherein each access transistor further includes a floating gate and a floating gate dielectric situated between the film and the gate with the floating gate dielectric disposed between the floating gate and the gate, the floating gate dielectric containing LaAlO₃.

44. (Withdrawn) The information handling device of claim 38, wherein the processor is a microprocessor.

45. (Withdrawn) The information handling device of claim 38, wherein the information handling device is a computer.